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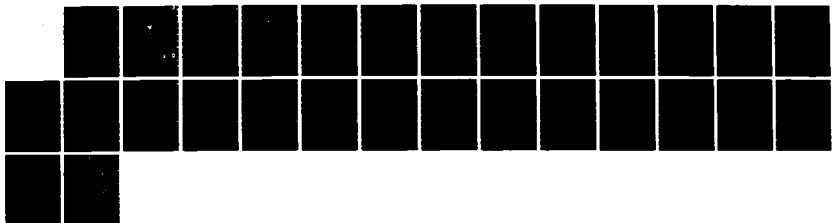
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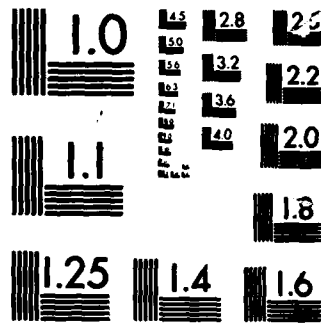
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AIR COMMAND AND STAFF COLLEGE

STUDENT REPORT

NEURO-LINGUISTIC PROGRAMMING:
HUMAN TECHNOLOGY FOR TODAY'S AIR FORCE

MAJ JOHN B CAULFIELD

86-0505

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Submitted to the faculty in partial fulfillment of
requirements for graduation.

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PREFACE

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NEURO-LINGUISTIC PROGRAMMING:

HUMAN TECHNOLOGY FOR TODAY'S AIR FORCE

A serious problem facing today's Air Force is how to improve human productivity to offset shrinking resources and a growing human technology gap. The human technology gap results from sophisticated high technology systems changing faster than the human beings required to operate and maintain them.¹ As the rate of change increases due to the complexity of the systems or changes to the environment, the gap widens.² Resources necessary to perform DOD missions are shrinking primarily because of expensive qualitative improvements in material technologies; inefficient or wasteful business practices; competing non-defense resource requirements; and congressional budget cuts to reduce looming deficits. As General Larry Welch, Commander in Chief, Strategic Air Command, stated:

Over the past four years, the Air Force has been authorized less than half the manpower growth associated with fielding new equipment, and we see clear indications that trend will continue. Those facts alone demand that we find ways to increase productivity, but beyond that, it is . . . clear to us whose end products are deterrence and military capability . . . that nothing can leverage our investment as powerfully as increasing the productivity of our people.³

Resource constraints impact on the Air Force's ability to improve human productivity through innovations and creative approaches to its training programs. The problem is compounded when one considers that about 20 percent of all military personnel are in training at any given time with associated annual costs in excess of \$12.8 billion (1982) and the number of training requirements that have been validated but not funded continues to grow.⁴ Resource and time constraints often result in training programs being developed based on subjective considerations rather than objective, systematic analyses of training requirements.⁵ The net result of these problems is that military training frequently emphasizes simple competence rather than excellence.⁶

One relatively new form of human technology being studied within DOD as a means to improve human productivity is Neuro-Linguistic ProgrammingTM (NLPTM). NLP is a unique blend of existing and variously proven techniques from several different disciplines that have been incorporated into a dynamic model of human communications and behavior. The NLP model is viewed by many DOD users not as a panacea for the above problems, but as a low cost, high performance means to train and motivate people to accomplish various DOD missions.

DOD elements first began experimenting with NLP in 1980. Do the results of these experiments demonstrate NLP's potential to contribute to the Air Force mission? What plans do the military services have to expand NLP applications? One cannot adequately address these questions without first understanding basic NLP

concepts and their scientific foundation.

Description

The NLP model provides a framework for understanding human subjective experience, which is the process human beings use to take in, organize, make sense of, and respond to information about their environment.⁷ Though this process varies from individual to individual, it has a definite structure that is governed by rules.⁸ The NLP model focuses on identifying primarily unconscious patterns of behavior and the underlying mental processes that govern this behavior. By correlating these patterns and processes, one may make certain assumptions about an individual's behavior and act on this knowledge.⁹

In NLP all behavior is communication, that is, the meaning of any communication is the response obtained from the listener. The NLP model focuses on three qualities of professional communicators:

1. They can identify an explicit, verifiable, and positive outcome or goal.
2. They have the sensory awareness and observational skill to obtain feedback about progress toward the goal.
3. They can vary their own behavior until the goal is achieved, that is, if one approach does not work, they try something different.¹⁰

The term "neuro-linguistic programming" is derived from several basic assumptions, one of the most important being our mind and body are part of the same system and cannot be isolated

from one another.¹¹ "Neuro" stands for the principle that all human behavior is the result of neurological processes. We input information about our environment through our five sensory systems: visual, auditory, kinesthetic, gustatory, and olfactory. Our sensory organs receive and transmit this information, via neural networks, to our brains. Our brains represent and process this information via its own neural networks. Each segment of this process initiates and modulates, via neural interconnections, a behavioral output. Thus, thinking about driving a car is just as much a behavior as driving a car.¹²

"Linguistic" indicates that neural activity is represented and processed through language and communication systems. We use words to encode what we perceive through our senses into internal maps or representations we create to make sense of our experiences and to guide our behavior.¹³ We also use words to express our experiences to others. Our word choice indicates the representational system(s) we use to process information.¹⁴

"Programming" refers to the process of generating a communication by using the same behavioral and cognitive patterns as someone else in order to direct them to a specific outcome.¹⁵ We instinctively program ourselves and others, but usually in a random fashion with little control over results. NLP provides a model and operating procedures to ensure effective results of programming.

The NLP model is based on three universal methods human beings use to represent their experiences to themselves and to

others: generalization, deletion, and distortion.

Generalization is drawing from one set of experiences to understand and make predictions about similar new experiences. Deletion is limiting or restricting the awareness of experiences. Distortion is manipulating how we perceive or remember experiences.¹⁶ These methods can be helpful when properly used or limiting if they get out of control. The NLP model helps an individual hear and respond to the form of a speaker's communication in order to generate information that is missing or distorted.¹⁷

The NLP model also includes three filters that affect how well or how poorly individuals perceive and use information about their environment: neurological, social, and individual. The functioning of our sense organs and nerves distinguish how well we perceive our world as compared to others. Social constraints, such as language, culture, traditions, and customs, also serve to filter experiences and account for differences in individual perceptions. Individual personal experiences affect what specific experiences are remembered and how they are manipulated and recombined in thinking. The NLP model enables one to explore differences between what people experience and how they make sense of those experiences.¹⁸

NLP communication techniques emphasize gathering information about another individual's subjective experience. They include recognizing subtle, primarily unconscious behavioral cues that indicate the representational system an individual favors in general or the formal sequence of representations (strategy) they

have learned for a particular task, whether it is making a decision, creating, or learning. The most important behavioral cues are choice of predicates (process words such as see, hear, and feel) and eye movement patterns. Other behavioral cues used in NLP include breathing rates, voice tone and tempo, skin color changes, muscle tone changes, size of the lower lip, pulse or heart rate, body postures, and gestures.¹⁹

NLP persuasion and motivation techniques stress flexibility and are employed based on the information that has been gathered about another individual. For example, matching someone's unconscious verbal and non-verbal behavior establishes rapport and promotes a sense of trust and of being understood.²⁰ After matching someone's unconscious behavior over a short period of time and then consciously changing one's own behavior, the NLP user can trigger changes in another individual's behavior on the unconscious level.²¹ Universal elements of each representational system are used in conversation with individuals to also produce behavioral changes.²²

NLP maintains that humans in our culture encode experiences in a combination of any number of visual, auditory, and kinesthetic representations and tend to favor one representational system over the others. The olfactory or gustatory systems are not typically used in our culture to encode ongoing experiences. Our representations are processed in a strategy that is learned for a given task. This sequencing of representations determines the significance that a particular representation will have on an individual's behavior, just as the

sequencing of words in a sentence will determine the meaning of particular words.²³

The NLP assumption presently with the most significance for the Air Force is that individual skills are a function of the development and sequencing of representational systems and any skill can be broken down into its NLP components and taught to someone else.²⁴ Certain skills rely on strong visual (engineers, draftsmen, and scientists), auditory (linguists and morse code operators), or kinesthetic (athletes or persons performing any manual task) abilities. Other skills require certain combinations of these abilities. For example, the STINGER missile sight requires high visual and auditory followed by visual and kinesthetic abilities. The significance for the Air Force is it does not screen or select personnel for career fields or design training programs based on all required visual, auditory, and kinesthetic abilities.

Development

NLP was initially conceived by John Grinder and Richard Bandler in the early 1970s at the University of California, Santa Cruz. They were among the first researchers with a background in mathematics, linguistics, and psychology to study how language can produce change in people.²⁵ They studied professional communicators such as Virginia Satir and Fritz Perls. Bandler and Grinder then studied and incorporated into their model the linguistic and behavioral patterns used by Milton Erickson and observed in their own clinical research. They were assisted by

individuals such as Leslie Cameron-Bandler, David Gordon, Robert Dilts, Byron Lewis, Frank Pucelik, and Connirae and Steve Andreas. Material was gradually added to the NLP model from disciplines such as neurology, linguistics, cybernetics, psychology, and psychophysiology.²⁶ NLP is currently being used in a wide variety of contexts (therapy, organizational development, training, education, law, and business) by an increasing number of professionals within both the public and private sectors throughout the United States and internationally.²⁷

Research and Evaluation

Because NLP focuses on identifying and using unique behavioral patterns, it is difficult to evaluate the model based on statistical computations. Advocates concentrate on evaluating the usefulness of the NLP model and have produced several controlled studies validating some of the basic assumptions of NLP, such as the positive effects of matching verbal and non-verbal behavior and eye movement and sensory-based words indicating representational system access.²⁸ There have also been almost an equal number of research studies that have questioned the effectiveness of some elements of the NLP model. Studies with negative results generally attempted to isolate one piece of the NLP model in order to examine it as an independent pattern. NLP proponents argue these pieces can be isolated to make them learnable, but to quantify their effects, they must be applied simultaneously as a whole. Both proponents and critics

agree additional research is required to conclusively establish the effectiveness of some NLP assumptions.²⁹

DOD Applications

A few individuals within each military service have experimented with NLP, though usually on a relatively small scale and with little support from their commands. Initially, these individuals wanted to duplicate within DOD the successes NLP produced within the private sector. They wanted to use NLP to improve leadership skills and to motivate military personnel and organizations and better prepare them to perform their missions. They were also curious about the NLP attitude that anything less than excellence was not a worthwhile goal. Department of Defense applications of NLP have primarily been results-oriented and have generally not been quantified or published. The following examples of DOD applications of NLP are based on a series of personal and telephone interviews conducted between February 1985 and January 1986 with NLP trainers or other representatives of each organization referenced.

Army Applications. Of all the military services, the Army has the largest number of NLP trainers and the most experienced users of NLP. The Army Materiel and Readiness Command (now the Army Materiel Command or AMC) and the Intelligence and Security Command (INSCOM) were the first DOD organizations to use NLP. Organizational Effectiveness (OE) personnel from these two commands were trained by Bandler and Grinder and jointly developed a workshop called New Patterns of Influence. The

workshop was an attempt to teach basic NLP concepts and techniques and also to promote recent developments in organization and systems theory.

The New Patterns of Influence workshop was initially offered to three Army general officers in April 1980. These officers felt the training was useful and recommended the three day workshop be regularly offered to all Army general officers. The workshop was gradually expanded to include about 25 participants per class and was offered on roughly a quarterly basis. As of November 1985, 87 Army general officers and 69 Senior Executive Service civilians had been trained in NLP. The great majority of workshop participants found the basic instruction to be useful both professionally and personally and requested advanced training in NLP techniques.³⁰

A variation of the New Patterns of Influence executive-level workshop was initiated in 1981 by Army National Guard OE personnel. About 500 Army National Guard executives were trained in NLP techniques, again with very positive feedback. During the same time frame, Army V Corps OE personnel trained American Express military banking facility personnel and 66th Military Intelligence Group OE personnel trained Army and Air Force Exchange Service (AAFES) supervisors in Germany in NLP techniques for use in customer relations and employee counseling. Feedback from American Express personnel was very positive, though not documented. Feedback from AAFES personnel was documented and also highly positive.

Several INSCOM NLP trainers attended a demonstration of NLP

modeling technology in November 1983 and formed an ad hoc interagency group (Human Technology Task Force) to study specific military applications. INSCOM and AMC participants in the task force first decided to model .45 caliber pistol shooting and initiated Project JEDI. The goal of Project JEDI was to use NLP modeling technology to meet or exceed the qualification rate of the Army's Combat Pistol Qualification Training Course in half the time.³¹

Three expert pistol shooters from the Army Marksmanship Training Unit, Fort Benning, Georgia, including the national and the interservice champions, were modeled by JEDI modelers and by contractor (Grinder-Robbins Inc) personnel in February 1984. The modelers found the experts were very different from one another psychologically and in their shooting styles but discovered they had the same values and beliefs that motivated them to be experts and the same internal mental approach to shooting.³²

The modeling process extracted information about the sets of beliefs and values, internal mental processes, and physical activities used by the expert shooters.³³ After extracting this information, Army written material used to train pistol shooters was completely redesigned and modified to include a motivation piece to change the students' disabling values and belief system to that of the experts' and reorganized to coincide with the experts' internal mental approach.³⁴

The next stage was for JEDI modelers to teach the test group and Army Marksmanship Training Unit personnel to teach the control group. Both groups were tested using the Combat Pistol

Team Match in accordance with Forces Command (FORSCOM) and Training and Doctrine Command (TRADOC) Supplement 1 to Army Regulation 350-6. However, only 45 rounds (half the number normally prescribed) were used in order to conserve ammunition. The control group qualified in March 1984 at Range 7, Fort Meade, Maryland and the test group in May 1984 at the North Libby Range, Fort Belvoir, Virginia. Results were as follows:

Project JEDI: .45 Caliber Pistol Modeling

<u>Number</u>	<u>Control</u> <u>Group</u>	<u>NLP Modeled</u> <u>(Test) Group</u>
People Trained	11	12
People Qualified	8	12
- Expert	1	3
- Sharpshooter	4	1
- Marksman	3	8
People Failed to Qualify	3	0
Hours Training	27	12
Average Rounds/Person	375	176

Project JEDI was the first completed study by any DOD element trying to empirically establish NLP's effectiveness. As such, inadequate research protocols, controls, and the small size of the test and control groups diminished Project JEDI's very impressive results. However, JEDI personnel felt confident the results could be duplicated or even exceeded (with further refinements) under more scientific conditions and given adequate resources.³⁵ AMC plans to test this assumption using the new Beretta pistol.³⁶

The Army Materiel Command is currently involved in using NLP modeling technology in training programs for STINGER gunners at Fort Bliss, Texas and in Europe. A group of NLP-trained gunners from three European battalions improved by 12 percent the number of hits during preliminary test firings in August 1985 (29 out of 32) as in 1984 (15 out of 19).

In the fall 1985, AMC began developing another NLP modeling project involving rifle (M-16) marksmanship training at the Infantry School, Fort Benning, Georgia. AMC plans to quantify results and use one test and three control groups from a cohort company. If AMC can save the Army just one round of ammunition per soldier, it estimates savings of \$500,000 per year. AMC also plans to use NLP to model TOW gunners and to help improve the ASW-M (follow-on to TOW) equipment design in 1986. AMC will expand the number of its NLP modelers to 12 to conduct these projects.

Also in 1986, the Army Research Institute plans to initiate Project STARS (Sales Training Army Recruiter Success) on behalf of the Army Recruiting Command to use NLP techniques to model skills employed by expert recruiters. The goal of Project STARS is to develop a new recruiter training program aimed at a higher category recruit than now being targeted by the Army.

Navy Applications. Army Materiel Command efforts to develop and coordinate information on research involving DOD applications of NLP have triggered a desire in a few individuals in the other military services to initiate their own experiments. A researcher at the Naval Medical Research and Development Command,

Bethesda, Maryland is developing a proposal for a pilot project that will use NLP to model expert sonar operators. The project's goals will be to improve the process whereby the Navy identifies, screens, and selects sonar operators for training and to reduce the time and cost of the training. The project proposal and research protocols will probably be completed in calendar year 1986. The Navy researcher would also like to see DOD study NLP applications for combat fatigue.

Air Force Applications. Air Force applications of NLP are also extremely limited. The Human Resources Laboratory and the School of Aerospace Medicine, Aerospace Medical Division, Air Force Systems Command (AFSC), Brooks AFB, Texas and the Air Training Command (ATC), Randolph AFB, Texas are not currently evaluating or using NLP. According to the Armed Forces Medical Evaluation Center (AFMEC), Air Force research and evaluation of NLP or other new forms of human technology will await the establishment of an aviation psychology program. Most, if not all of the approximately 163 Air Force clinicians are familiar with NLP and use it to various degrees as one of several cognitive psychology techniques in psychotherapy. The same is true for most military and civilian clinicians since they are exposed to NLP in their professional training and journals.

The Leadership Management and Development Center, Air University, Maxwell AFB, Alabama includes about one and one half hours of instruction on basic NLP concepts and techniques in its Noncommissioned Officer Instructor Preparation Course. Students have consistently rated instruction in NLP as extremely

beneficial in improving communications skills and facilitating learning.

Air Force and other DOD personnel attending the DOD Strategic Debriefing Course, Fort Huachuca, Arizona receive 16 hours of training on NLP rapport building techniques and how to employ them. Students are also trained to recognize incongruent behavior that may indicate when someone is fabricating or lying. Feedback from the students is almost always positive and usually includes requests for additional training in advanced NLP techniques.

Contractors

Bandler and Grinder have both provided NLP training and services to the Army at various times. There are a number of other sources of qualified NLP trainers and practitioners. The Society of Neuro-Linguistic Programming was established by the developers and leading users of NLP to provide quality control and to coordinate information on NLP research. The Society grants three levels of certification: practitioner, master practitioner, and trainer. Trainer is the highest level of certification. The Society maintains a directory of all individuals certified to provide training, services, and materials relating to the NLP model and there are several NLP Institutes throughout the United States.³⁷

Contractors with personnel certified in NLP who have a great deal of experience and pleased customers within DOD include Metasystems Design Group Incorporated, Arlington, Virginia;

Evolutionary Services Institute, Bethesda, Maryland; and the BDM Corporation, McLean, Virginia. The BDM Corporation has been asked by a DOD element to use NLP to develop a new training program for interrogators. The BDM Corporation has also submitted a proposal to a DOD element to use NLP to model expert Morse code operators in order to improve personnel selection and meet or exceed current training results in half the time. If approved, BDM plans to quantify results of its Morse code modeling program and task its staff psychologists and behavioral scientists to validate the NLP model.

Conclusion

Since NLP is new and research and evaluation is ongoing, decisions on future military applications of this technology should be based on the results of planned AMC or BDM attempts to validate the NLP model or on other suitably quantified, controlled, and conducted tests. New DOD applications of NLP, at least in the near term, should be quantified to help further establish NLP's effectiveness. The military services need to monitor each other's developments in human technology and pool their resources in instances where requirements are similar. Interested or responsible service representatives can use electronic bulletin boards to exchange ideas and coordinate research information. Unfortunately, human technology is one area where the military services do not have a good record of cooperation.

The Air Force can apply NLP across the spectrum of its

> activities. A program stressing new human technologies will have immediate payoffs in terms of resource savings and improved human performance and will complement the current Air Force emphasis on using new materiel technologies to improve the reliability and maintainability of weapon systems. Some NLP applications with potential to significantly contribute to the Air Force mission include modeling the skills and talents of experts to improve or develop new training programs and reduce training times and costs; improving interpersonal communication and leadership skills of supervisors; producing psychological or behavioral changes in psychotherapy; screening, selecting, or recruiting personnel; and identifying human engineering factors in weapon and training systems design and development. ←

Shrinking resources and a growing human technology gap will continue to jeopardize DOD's warfighting capabilities unless the military services aggressively pursue innovative and creative new ideas to improve human productivity. This is especially true in the training arena. The most important characteristic of any training program or system is how well it can produce a person who can do the job in the most cost effective manner. To determine training effectiveness, requirements must be translated into behavioral terms so students' achievements can be measured.³⁸

The above examples of DOD applications have helped demonstrate that NLP can effectively translate training requirements into behavioral terms. They have also shown that NLP can be used to determine patterns in experts' behavior that

they are not aware of themselves and that these patterns can be transferred to others to promote excellence. Most importantly, these applications have demonstrated that NLP is instrumental in identifying human engineering factors early in the life cycle of some new weapon and technical training systems and can help design engineers better balance human and hardware contributions to improve the performance of these systems.³⁹ The positive results of the above DOD applications indicate that neuro-linguistic programming has the potential to significantly improve human productivity and our military capability.

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35. Ibid, p. 8.

36. Human Technology Task Force Report, pp. 3-5.

37. The directory can be obtained from NLP Proficiency Associates, P.O. Box 7818, Santa Cruz, California 95060, telephone (408)462-7183. Regional NLP Institutes are located in Larkspur and Los Angeles, California; Millis, Massachusetts; Washington Crossing, Pennsylvania; New York, New York; South Bend, Indiana; Vienna, Virginia; Raleigh, North Carolina; Boulder, Colorado; Seattle, Washington; New Orleans, Louisiana; and Indian Rock Beach, Florida.

38. Glennon et al., p. 2.

39. Ibid, pp. 6-8.

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